

LISTING OF CLAIMS

1(currently amended). An electroless method for treating a substrate having an electrically conductive surface comprising:

providing a medium comprising water, about 1 to about 15 weight percent of at least one silicate and having a basic pH and wherein said medium has a temperature of greater than about 50C;

contacting at least a portion of the ~~substrate~~ surface with the medium,

drying the ~~substrate~~ surface,and;

applying at least one coating selected from the group consisting of latex, silanes, epoxies, silicone, amines, alkyds, urethanes, polyester and acrylics.

2(previously presented). The method of Claim 1 wherein the medium further comprises colloidal silica, and wherein the medium is substantially free of chromates and VOCs.

3(previously presented). An electroless method for treating a metallic or an electrically conductive surface comprising:

exposing at least a portion of the surface to a medium comprising a combination comprising water, colloidal silica, and at least one water soluble silicate wherein said medium has a basic pH,

drying the surface; and

contacting the treated surface with at least one composition that adheres to the treated surface.

4(currently amended). The method of Claim 3 wherein the colloidal silica has a particle size of ~~less than~~ about 10 to about 50 nanometers.

5(original). The method of Claim 1 wherein the surface comprises at least one member selected from the group consisting of copper, nickel, tin, iron, zinc, aluminum, magnesium, stainless steel and steel and alloys thereof.

6(previously presented). The method of Claim 1 further comprising rinsing after said drying and said rinsing comprises contacting the surface with a second medium comprising a combination comprising water and at least one water soluble compound selected from the group consisting of carbonates, chlorides, fluorides, nitrates, zirconates, titanates, sulphates, water soluble lithium compounds and silanes.

7(previously presented). The method of Claim 1 wherein the medium comprises at least one dopant selected from the group consisting of zinc, cobalt, molybdenum, nickel, and aluminum.

8(previously presented). The method of Claim 1 wherein said drying is conducted at a temperature of at least about 120C.

9(previously presented). The method of Claim 5 wherein said surface comprises zinc or zinc alloys.

10(currently amended). The method of Claim 7 wherein the medium comprises a combination comprising water, ~~greater than~~ about 1 to about 15 weight percent of sodium silicate and at least one dopant selected from the group consisting of cobalt, nickel and molybdenum.

11(previously presented). The method of Claim 3 wherein the surface comprises a chromated surface.

12(previously presented). The method of Claim 3 wherein said medium further comprises at least one water dispersible polymer.

13(currently amended). The method of Claim 1 wherein said method further comprises treating the ~~substrate~~ surface with at least one acid before said contacting.

14(previously presented). The method of Claim 9 wherein said surface comprises zinc nickel alloys.

15(previously presented). The method of Claim 1 wherein the pH of the medium ranges from about 10 to about 12.

16(currently amended). The method of Claim 9 wherein the surface comprises ~~die~~ east-zinc a zinc core

17(previously presented). The method of Claim 1 wherein said medium further comprises at least one reducing agent selected from the group consisting of sodium borohydride and hypophosphide.

18(previously presented). The method of Claim 3 wherein said composition comprises at least one member selected from the group consisting of latex, silanes, epoxies, silicone, amines, alkyds, urethanes, polyester and acrylics.

19(currently amended). The method of Claim 1 wherein said at least one silicate comprises ~~at least one alkali silicate having an alkali to silica molar ratio of about 1:3~~ sodium silicate.

20(currently amended). An electroless method for treating an electrically conductive substrate comprising:

providing a substrate comprising at least one member selected from the group consisting of nickel, zinc, iron, aluminum, magnesium, steel, stainless steel and alloys thereof, and wherein the substrate optionally has a chromated surface,

providing a medium comprising water, at least one silicate and having a basic pH and wherein said medium is substantially free of chromates;

contacting at least a portion of the surface with the medium
drying the substrate.

21(new). An electroless method for treating an electrically conductive substrate comprising:

providing a substrate comprising at least one member selected from the group consisting of nickel, zinc, iron, aluminum, magnesium, steel, stainless steel and alloys thereof, and wherein the substrate optionally has a chromated surface,

contacting at least a portion of the substrate with a first medium comprising at least one dopant,

providing a second medium comprising water, at least one silicate and having a basic pH and wherein said medium is substantially free of chromates;

contacting at least a portion of the surface with the second medium; and

applying at least one coating selected from the group consisting of latexes, silanes, epoxies, silicones, amines, alkyds, urethanes, polyesters and acrylics.

22(new). The method of Claim 21 wherein the second medium further comprises at least one reducing agent.

23(new). The method of Claim 21 wherein the dopant comprises at least one member selected from the group consisting of cobalt, nickel and molybdenum.

24(new). The method of Claim 21 wherein the substrate comprises zinc and zinc alloys.